

MARYLAND
STATE CHILD FATALITY REVIEW TEAM
Baltimore, Maryland 21201

The Honorable Larry Hogan
Governor
State of Maryland
Annapolis, MD 21401-1991

The Honorable Bill Ferguson
President of the Senate
State House, H-107
Annapolis, MD 21401-1991

The Honorable Adrienne A. Jones
Speaker of the House
State House, H-101
Annapolis, MD 21401-1991

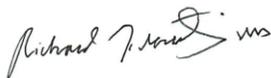
RE: Health-General Article, § 5-704(b)(12) and Senate Bill 464 (Chapter 355 of the Acts of 1999) – 2019 Legislative Report of the State Child Fatality Review Team

Dear Governor Hogan, President Miller, and Speaker Jones:

Pursuant to Health-General Article, § 5-704(b)(12) and Senate Bill 464, Chapter 355 of the Acts of 1999, the Maryland State Child Fatality Review Team submits this 2019 report on its progress and accomplishments in calendar year 2018. The report includes data relating to unexpected child deaths in Maryland that occurred in calendar year 2018. These deaths were reported by the Office of the Chief Medical Examiner and reviewed by the local Child Fatality Review team in each jurisdiction.

If you have questions or need further information about this report, please contact me at (410) 328-2079 or rlichenstein@peds.umaryland.edu.

Sincerely,



Richard Lichenstein, MD
Chairperson

cc: Webster Ye, Director, Office of Governmental Affairs
Frances B. Phillips, RN, MHA, Deputy Secretary, Public Health Services
Donna Gugel, MHS, Director, Prevention and Health Promotion Administration
Courtney McFadden, MPH, Acting Director, Maternal and Child Health Bureau
Sarah Albert, MSAR #7575

MARYLAND STATE CHILD FATALITY REVIEW TEAM

2019 Annual Legislative Report

Health-General Article, § 5-704(b)(12)

Larry Hogan
Governor

Boyd K. Rutherford
Lt. Governor

Robert R. Neall
Secretary of
Health

<http://phpa.health.maryland.gov/mch/Pages/cfr-home.aspx>

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List of Abbreviations

AAP	American Academy of Pediatrics
CDRCRS	National Child Death Review Case Reporting System
CFR	Child Fatality Review
CPS	Child Protective Services
CRBC	Citizen Review Board for Children
MDH	Maryland Department of Health
MMQRC	Morbidity, Mortality, and Quality Review Committee
MVA	Motor Vehicle Accident
NH	Non-Hispanic
OCME	Office of the Chief Medical Examiner
SCCAN	State Council on Child Abuse and Neglect
SIDS	Sudden Infant Death Syndrome
SUID	Sudden Unexpected Infant Death
SUDIC	Sudden Unexplained Death in Childhood
ZCTA	ZIP Code Tabulation Area

Overview of Maryland Child Fatality Review

Child Fatality Review (CFR) is a systematic, multi-agency, and multi-disciplinary review of unexpected child deaths. This review process, which began in Los Angeles in 1978 as a mechanism to identify fatal child abuse and neglect, has grown into a national system to examine unexpected child fatalities to inform prevention efforts.

The purpose of the Maryland State CFR Team (Team) is to prevent child deaths by:

- (1) Understanding the causes and incidence of child deaths;
- (2) Implementing changes within the agencies represented on the State CFR Team to prevent child deaths; and
- (3) Advising the Governor, the General Assembly, and the public on changes to law, policy, and practice to prevent child deaths.

The State CFR Team envisions the elimination of preventable child fatalities by successfully using the CFR process to understand the circumstances around incidents of child fatality and recommending strategies to prevent future fatalities.

The Maryland CFR Program (Program) was established by statute in Health-General Article, § 5-704(b)(12) and Senate Bill 464 (Chapter 355 of the Acts of 1999). The Program is housed within the Maryland Department of Health (MDH) for budgetary and administrative purposes. The 25 member Team is comprised of representatives from multiple State agencies and professional organizations, as well as two pediatricians and 11 members of the general public with interest and expertise in child safety and welfare who are appointed by the Governor (see Appendix A). The Team meets at least four times a year to address 13 statutorily-mandated duties (see Appendix B). One of these meetings occurs in conjunction with an all-day training for local CFR team members on select topics related to child fatality issues (see Appendix C).

The Team provides support to local CFR teams that operate in each jurisdiction. The local CFR teams receive notice from the Office of the Chief Medical Examiner (OCME) of unexpected resident deaths of children under age 18. The local CFR teams are required to review each of these deaths. Local teams meet at least quarterly to review cases and make recommendations for local level systems changes to statute, policy, or practice to prevent future child deaths, and work to implement these recommendations. This report covers data for calendar year 2018 OCME-referred deaths.

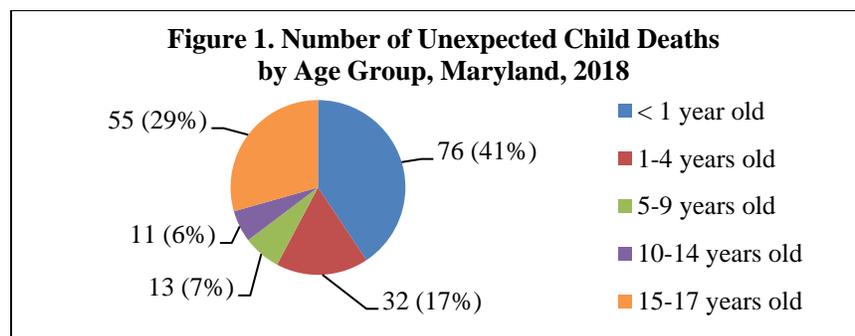
Other multidisciplinary groups in Maryland have similar charges to prevent child injury and death. The State Council on Child Abuse and Neglect (SCCAN) and the Citizen Review Board for Children (CRBC) examine policies and practices for protecting children. The Team works collaboratively with SCCAN and CRBC to coordinate prevention efforts. Also, the MDH Morbidity, Mortality, and Quality Review Committee (MMQRC), established by legislation in 2008, is charged with reviewing morbidity and mortality associated with pregnancy, childbirth, infancy, and early childhood. The MMQRC provides another opportunity for review and dissemination of information and recommendations developed through the CFR process. The local CFR teams also work collaboratively with local Fetal and Infant Mortality Review teams in each jurisdiction.

Unexpected Child Deaths – Maryland, 2018

Childhood deaths are a major public health concern, as many of these deaths are preventable. Surveillance of childhood deaths is important because it helps to measure the magnitude of the problem and assess the causes and populations affected. These data are crucial in identifying trends and targeting interventions to prevent childhood deaths. The CFR process reviews all unexpected child deaths referred by the OCME. This subset of child deaths includes cases of Sudden Unexpected Infant Death (SUID), unintentional injury, homicide, suicide, and some deaths due to natural causes.¹ Epidemiologists within the MDH Maternal and Child Health Bureau analyzed OCME-referred child deaths for summary in this report. This report examines data related to 2018 child deaths available as of October 2, 2019.

An important aspect of Maryland’s CFR review process is the local team’s use of additional data sources – including medical records, school district data, police investigations, emergency medical service records, and investigations by the Department of Social Services – to improve the overall quality of the case review data. In recent years, local CFR teams have received additional training to accurately and consistently classify child deaths. These data are then uploaded to the National Child Death Review Case Reporting System (CDRCRS), which was authorized in 2009 by House Bill 705. Because of the improved capacity at the local level to report more accurate and complete data, this report uses the data as reported to CDRCRS rather than the OCME data used in previous reports. Thus, the annual number of cases by different demographic characteristics may vary from previous annual reports.

In 2018, the OCME referred 187 unexpected child deaths to the local CFR teams for review. Figure 1 shows the distribution of these deaths by age. Seventy-six deaths (41 percent) occurred among infants (under one year of age). Of the 187 unexpected child deaths, 116 deaths (62 percent) occurred among male children and 71 deaths (38 percent) among female children.

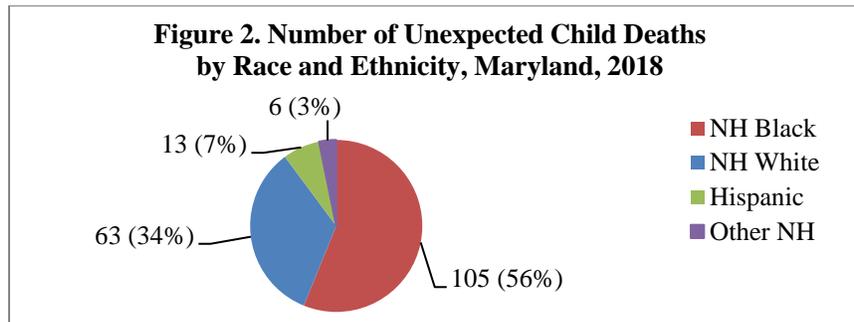


Source: CDRCRS, as of 10/2/2019.

Figure 2 shows the distribution of 2018 unexpected child deaths by race and ethnicity. Non-Hispanic Black children had the highest number of unexpected deaths, more than eight times

¹ SUID is the sudden death of an infant less than one year of age that cannot be fully explained after a thorough review of the medical history, a complete autopsy, and examination of the death scene.

greater than unexpected deaths among Hispanic children and sixty percent greater than the number of unexpected deaths among Non-Hispanic White children.



Source: CDRCRS, as of 10/2/2019.
NH: Non-Hispanic

Cause of death categories were assigned to each case based on the cause of death determined by the CFR team, where available. If the cause of death determined by the CFR team was not available, the OCME cause of death was used. In Table 1, the number and percentage of child fatality cases occurring in 2018 are shown by cause of death category. Among the 187 cases, the three leading causes of death were SUID, injury, and homicide. Together these three causes accounted for 71 percent of all child fatality cases in 2018.

SUID was the leading cause of child fatality cases in 2018. The National Center for Fatality Review and Prevention defines SUID as deaths that occur suddenly and unexpectedly in previously healthy infants and have no obvious cause of death prior to investigation (unexplained). All potentially non-natural causes of death cannot reasonably be excluded by the investigation and/or there is an issue of concern; for example an unsafe sleeping environment or other environmental concerns, previous Sudden Infant Death Syndrome (SIDS) in the immediate family, healed unexplained injuries, parental substance abuse etc.” SIDS is included in this category.

Table 1. Unexpected Child Deaths by Cause of Death Category, Maryland, 2018		
	<u>Number</u>	<u>Percent</u>
SUID*	63	33.7
Injury	47	25.1
Homicide	22	11.8
Medical Condition	21	11.2
Suicide	20	10.7
Infectious Disease	8	4.3
SUDIC**	4	2.1
Birth Related	1	0.5
Pending	1	0.5
Total	187	100.0

Source: CDCRCS, as of 10/2/2019.

* Sudden unexplained infant death (<1 year old)

** Sudden unexplained death in childhood (SUDIC) (1-5 years old)

Injury was the second leading cause of 2018 unexpected child deaths. Table 2 further breaks down the injury deaths by subcategory. Motor vehicle accidents (MVAs) were the leading cause of injury death (44.7 percent), followed by unintentional overdose (14.9 percent) and drowning (12.8 percent). These three types of injuries accounted for 72 percent of all reviewed injury deaths.

Local CFR teams reported 16 deaths (8.6 percent) resulting from confirmed abuse or neglect among the 187 deaths occurring in 2018. This means there was a finding of indicated abuse or neglect by Child Protective Services (CPS) or through police investigation.

Table 2. Child Injury Deaths by Subcategory, Maryland, 2018		
	<u>Number</u>	<u>Percent</u>
MVA	21	44.7
Unintentional Overdose	7	14.9
Drowning	6	12.8
Fires/Burns	5	10.6
Asphyxia	4	8.5
Fall or Crush	2	4.3
Firearm	1	2.1
Head Trauma	1	2.1
Total	47	100.0

Source: CDCRCS, as of 10/2/2019.

In Table 3, the number and percentage of deaths in 2018 are shown by jurisdiction of residence of the child at the time of death. More than 26 percent of all child fatality cases occurred among children residing in Baltimore City.

Table 3. Unexpected Child Deaths by Jurisdiction of Residence*, Maryland, 2018		
	<u>Number</u>	<u>Percent</u>
Baltimore City	49	26.2
Baltimore County	24	12.8
Prince George's	20	10.7
Montgomery	18	9.6
Anne Arundel	9	4.8
Charles	7	3.7
Howard	7	3.7
Wicomico	7	3.7
Harford	6	3.2
St. Mary's	6	3.2
Carroll	5	2.7
Frederick	5	2.7
Washington	5	2.7
Cecil	4	2.1
Dorchester	4	2.1
Caroline	3	1.6
Queen Anne's	3	1.6
Calvert	2	1.0
Allegany	1	0.5
Garrett	1	0.5
Talbot	1	1.5
Total	187	100.0

Source: CDRCRS, as of 10/2/2019.

* Kent, Somerset, and Worcester counties had no child deaths and are not listed.

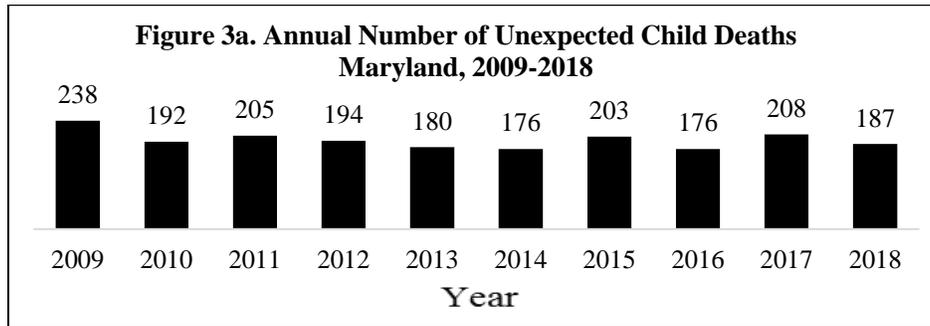
Trends in Maryland Unexpected Child Deaths

The data collection efforts of local CFR teams have undergone significant process improvements in recent years. Reports now rely on child demographic data input by CFR teams into a national database.² Prior to 2017, only case details provided by the OCME were used for reporting child demographic data. Thus, the annual number of cases by different demographic characteristics may vary from previous annual reports.

Figure 3a shows the annual number of unexpected child deaths referred by the OCME during the ten-year period from 2009 to 2018. The annual number of OCME-referred deaths changed very

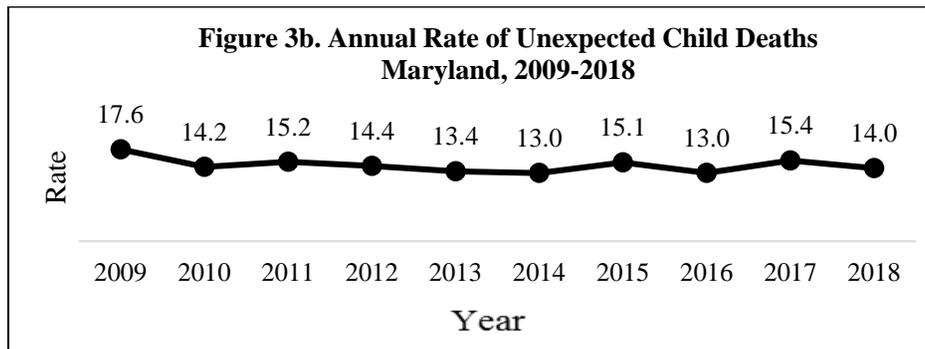
² National Child Death Review Case Reporting System. The National Center for Fatality Review and Prevention. Accessed 11 December, 2019. <https://www.ncfrp.org/resources/national-cdr-case-reporting-system/>

little from the beginning of the CFR program in 2000 through 2008. From 2008 to 2014, the number of referred deaths decreased by 37 percent. This likely represented an actual decrease in the number of unexpected child deaths in the State since there was no change in the case selection or reporting process during that period. Since 2014, the number of child fatality cases has fluctuated between 176 and 208. Since 2010, the number of referred unexpected child deaths has represented about 27 percent of all child deaths under 18 years old.



Source: CDRCRS, as of 10/2/2019.

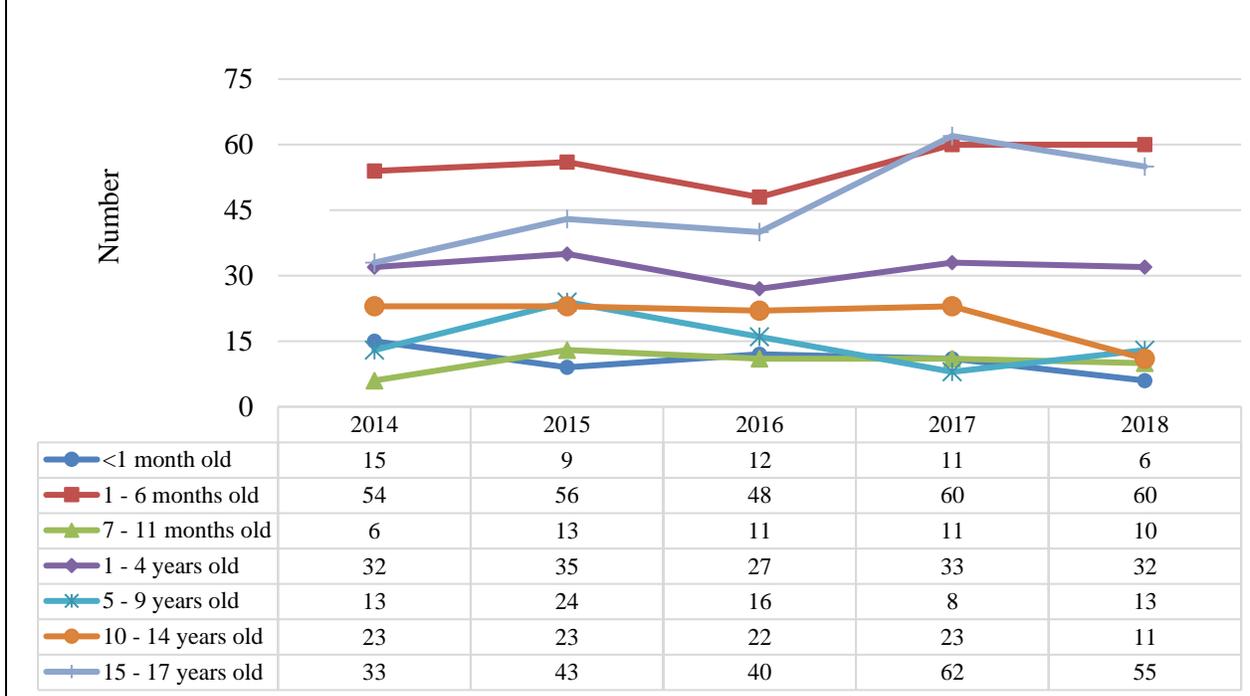
Figure 3b shows the annual rate of unexpected child deaths per 100,000 population ages 0 to 17 for the ten-year period from 2009 to 2018. The rate declined by 20 percent from 2009 to 2018.



Source: CDRCRS, as of 10/2/2019. Rates per 100,000 population based on National Vital Statistics System population estimates.

Figure 4a shows the number of child fatality cases by age group over the five-year period from 2014 to 2018. Between 2017 and 2018, the number of deaths decreased in all age groups except infants ages one to six months old and children ages five to nine years old, but the largest decrease was among children ages 10 to 14.

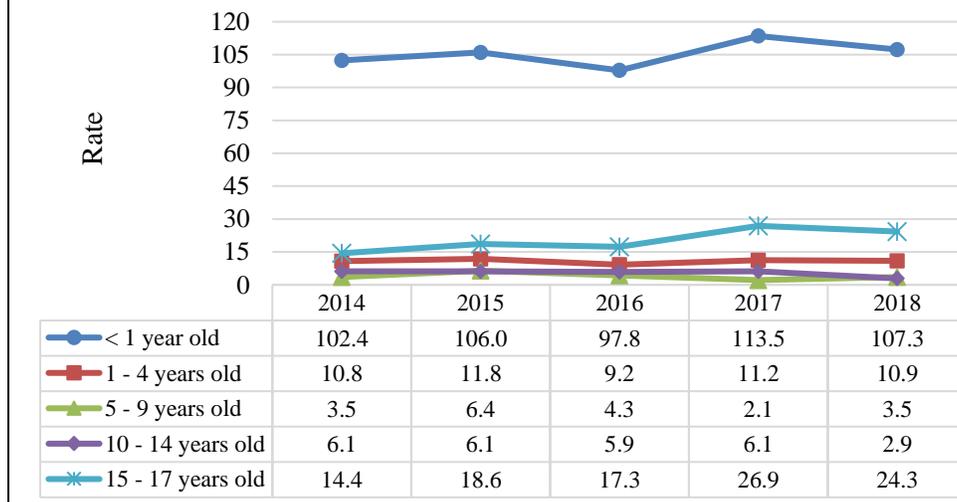
Figure 4a. Number of Unexpected Child Deaths by Age Group, Maryland, 2014-2018 (n=950)



Source: CDRCRS, as of 10/2/2019.

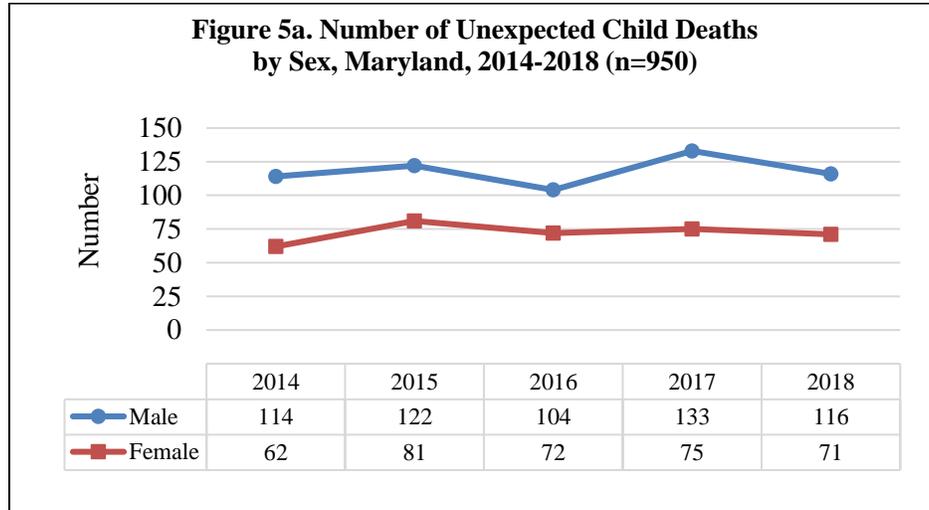
Figure 4b shows how much more frequent unexpected child deaths are among infants (less than one year of age). The rate of deaths among infants in Maryland is more than four times higher than the rate among children ages 15-17 years old. Among infant deaths, 79 percent occurred between the ages of one month and six months, accounting for 32 percent of all unexpected child deaths.

Figure 4b. Rates of Unexpected Child Deaths by Age Group, Maryland, 2014-2018

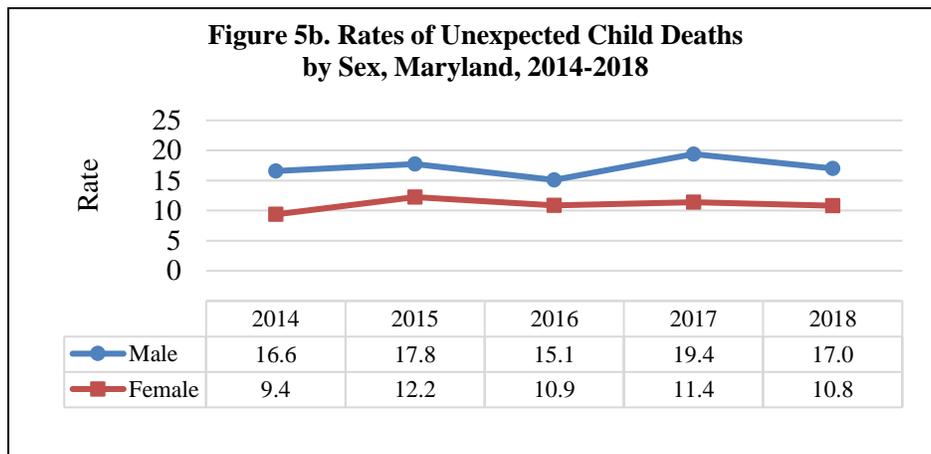


Source: CDRCRS, as of 10/2/2019. Rates per 100,000 population based on National Vital Statistics System population estimates.

During the same period (2014 to 2018), the number (Figure 5a) and rate (Figure 5b) of unexpected deaths was consistently higher among male children than among female children. In 2018, the number of unexpected deaths was 63 percent higher among male children than among female children.



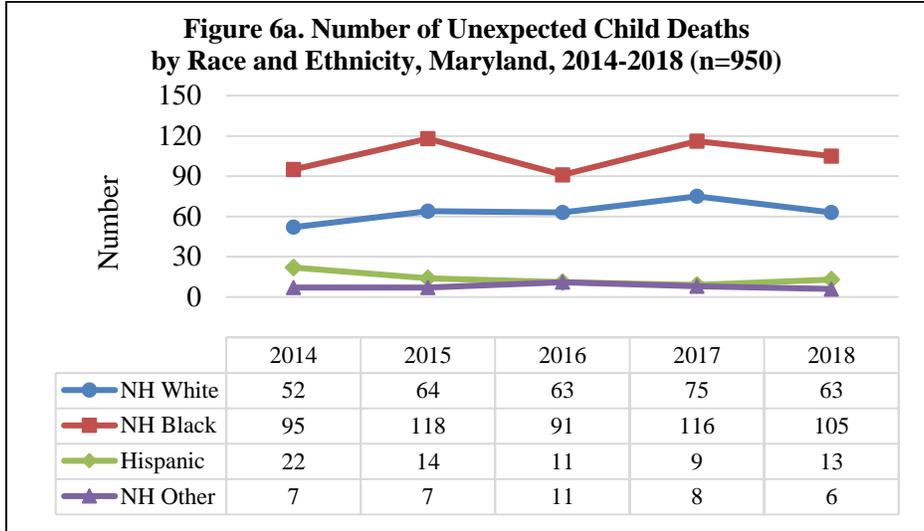
Source: CDRCRS, as of 10/2/2019.



Source: CDRCRS, as of 10/2/2019.

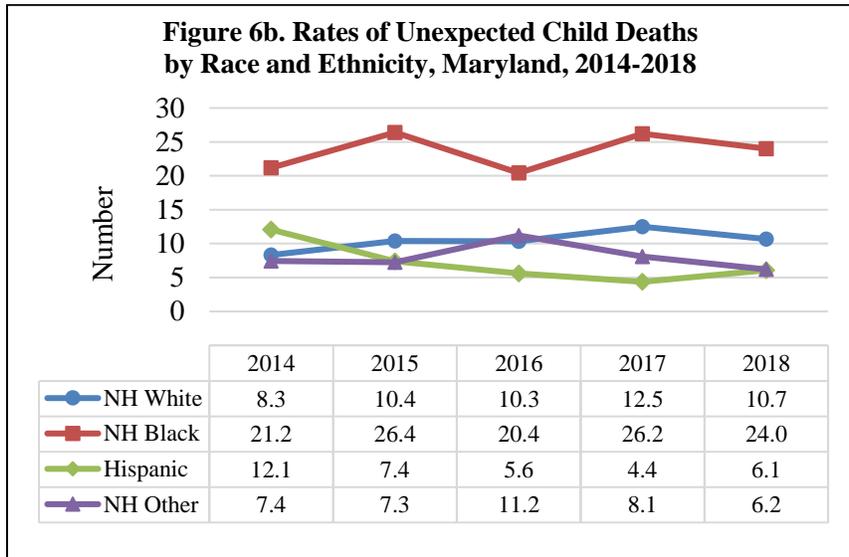
Rates per 100,000 population based on National Vital Statistics System population estimates.

Similarly, Figure 6a shows the continued disparities among racial and ethnic groups. In 2018 the number of unexpected child deaths among Non-Hispanic Black children was 66 percent higher than the number of deaths among Non-Hispanic White children.



Source: CDRCRS, as of 10/2/2019.

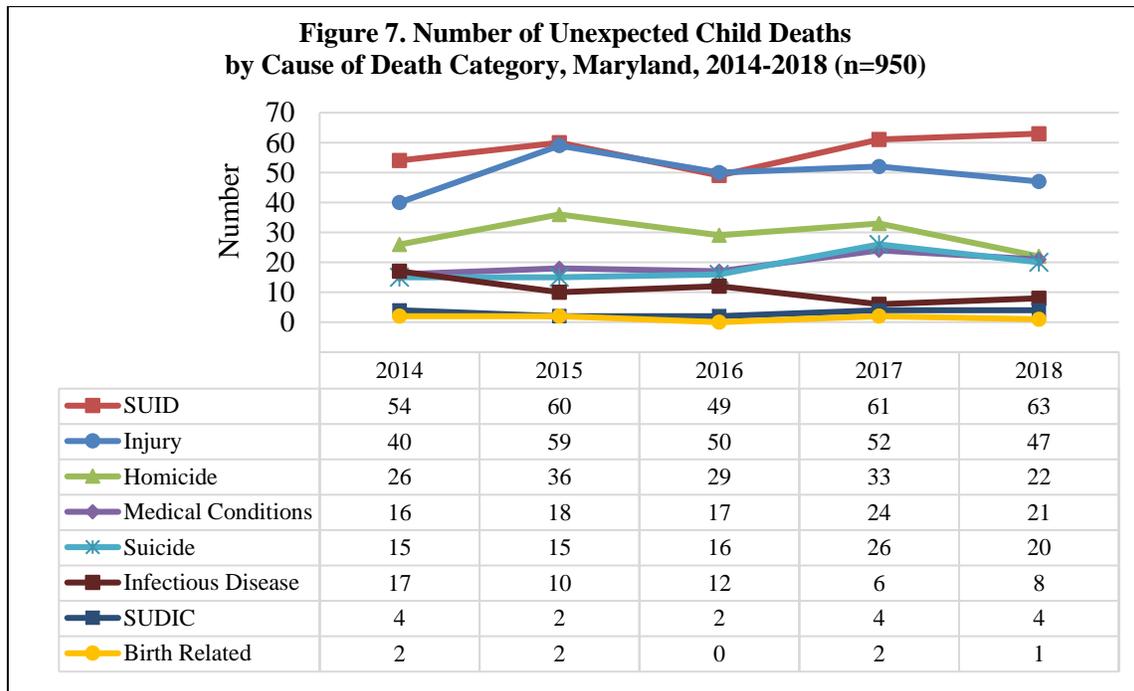
On average the rate of unexpected deaths from 2014-2018 among Non-Hispanic Black children was 2.3 times greater than the rate among Non-Hispanic White children and 3.8 times greater than the rates among Hispanic children (Figure 6b). The rate of unexpected deaths increased the most (29 percent) among Non-Hispanic White children from 8.3 per 100,000 population in 2014 to 10.7 in 2018. The rate of unexpected child death among Hispanic children has decreased by 50 percent since 2014.



Source: CDRCRS, as of 10/2/2019.

Rates per 100,000 population based on National Vital Statistics System population estimates.

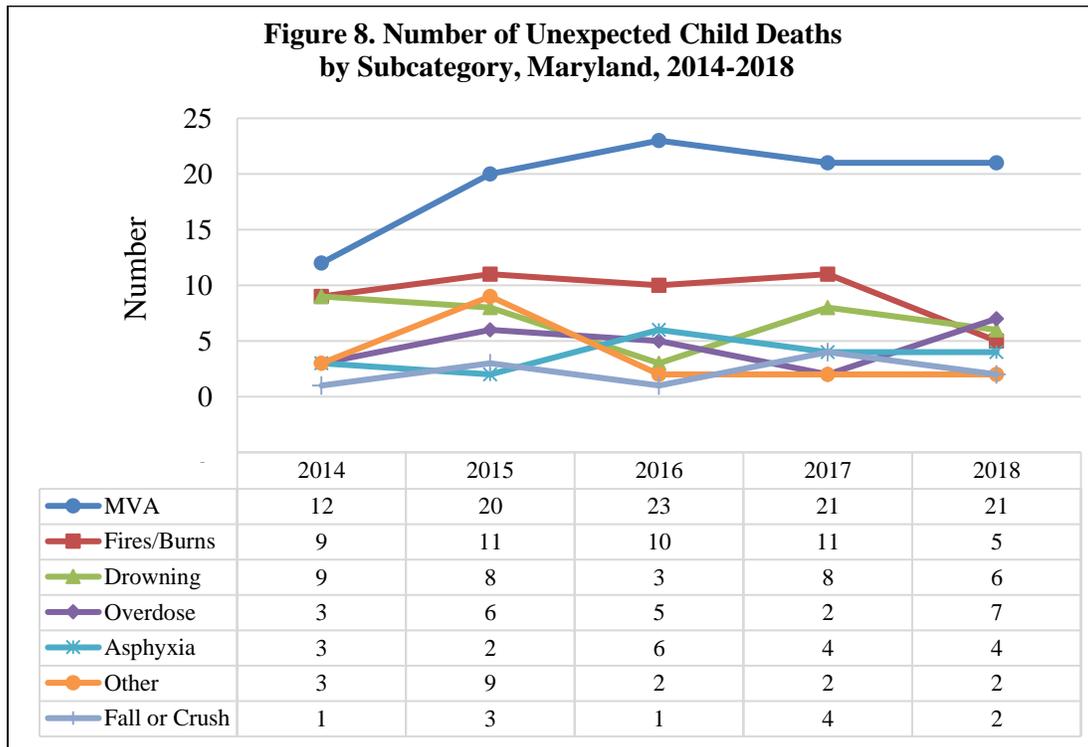
Figure 7 shows the number of unexpected child deaths by cause of death for the period from 2014 to 2018. SUID was the leading cause, injury the second leading cause, and homicide the third leading cause of death for each year except 2016, when injury was the leading cause.



Source: CDRCRS, as of 10/2/2019.

Excludes 'pending' cases (2 in 2014; 1 in 2015; 1 in 2016; 1 in 2018).

Figure 8 shows the subcategories of injury deaths over the past five years. The increase in injury deaths in 2015 was largely due to a doubling of the number of MVA deaths. The number of MVA deaths remained the same from 2017 to 2018. The number of deaths due to drug overdose has more than tripled since 2017. Between 2014 and 2018, 61 percent of overdose deaths occurred among children ages 15 to 17.



Source: CDRCRS, as of 10/2/2019.

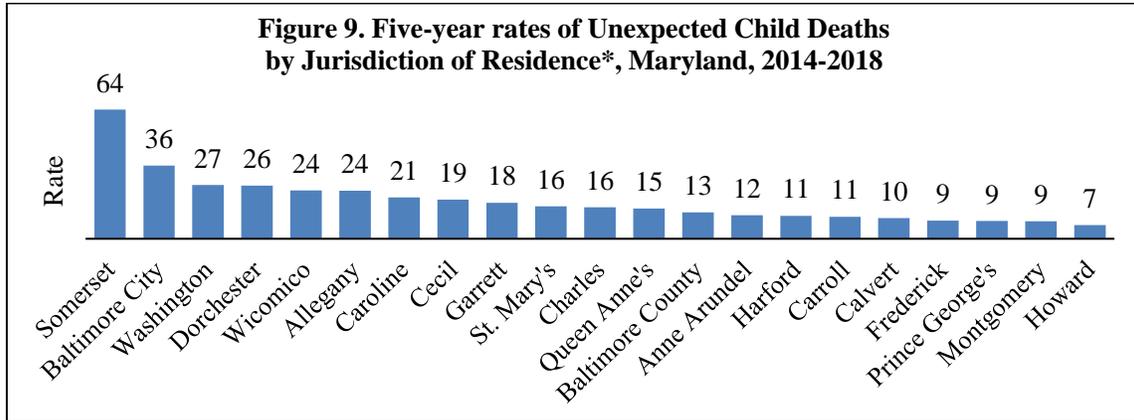
Table 4 shows the number of unexpected child deaths by jurisdiction of residence of the child at the time of death. During the five-year period from 2014 to 2018, the number of resident child deaths decreased in Montgomery County by 42 percent. From 2017 to 2018, the number of resident child deaths in Baltimore County decreased by 29 percent, and the number of resident child deaths in Anne Arundel County decreased by 44 percent. Baltimore City has had the highest number of resident child deaths for each of the past five years.

**Table 4. Number of Unexpected Child Deaths
by Jurisdiction of Residence, Maryland, 2014-2018 (n=950)**

	2014	2015	2016	2017	2018	Total
Baltimore City	45	49	39	50	49	232
Baltimore County	21	24	14	34	24	117
Montgomery	31	17	22	17	18	105
Prince George's	14	17	16	23	20	90
Anne Arundel	11	19	19	16	9	74
Washington	9	11	5	14	5	44
Harford	9	4	9	4	6	32
Charles	3	8	5	7	7	30
Wicomico	2	7	5	6	7	27
Frederick	6	3	7	5	5	26
Howard	2	5	8	4	7	26
Cecil	3	6	5	5	4	23
St. Mary's	5	5	2	4	6	22
Carroll	3	5	3	4	5	20
Allegany	5	4	3	2	1	15
Somerset	2	8	2	2	0	14
Calvert	1	2	2	4	2	11
Dorchester	1	1	2	1	4	9
Caroline	2	1	2	0	3	8
Queen Anne's	0	3	1	1	3	8
Garrett	1	2	1	0	1	5
Kent	0	0	2	2	0	4
Talbot	0	1	0	2	1	4
Worcester	0	1	2	1	0	4
Total	176	203	176	208	187	950

Source: CDRCRS, as of 10/2/2019.

The rates of unexpected child death were highest in Somerset County, Baltimore City, and Washington County (Figure 9). From 2014 to 2018, there were 64 unexpected child deaths per 100,000 population in Somerset County, followed by 36 per 100,000 in Baltimore City, and 27 per 100,000 in Washington County. The lowest rate of unexpected child death was among children in Howard County (7 per 100,000 population).



Source: CDCRCS, as of 10/2/2019. Rates per 100,000 population based on National Vital Statistics System population estimates. Minimum five reviewed deaths for inclusion. Kent, Talbot and Worcester counties did not have any unexpected child deaths over the five-year period.

Sudden Unexpected Infant Deaths in Maryland

Approximately 3,600 infants die suddenly and unexpectedly each year in the United States. While an exact cause of death cannot always be determined, unsafe sleep factors are present in the majority of cases, indicating that the deaths could have potentially been prevented if safe sleep practices were always followed.²

These deaths are often not witnessed, the death scene may be disturbed before it can be examined, key facts may be forgotten or go unreported, and there may be no autopsy finding or medical test to prove the exact cause of death (e.g., suffocation). The mechanisms that lead to many sleep-related deaths include:

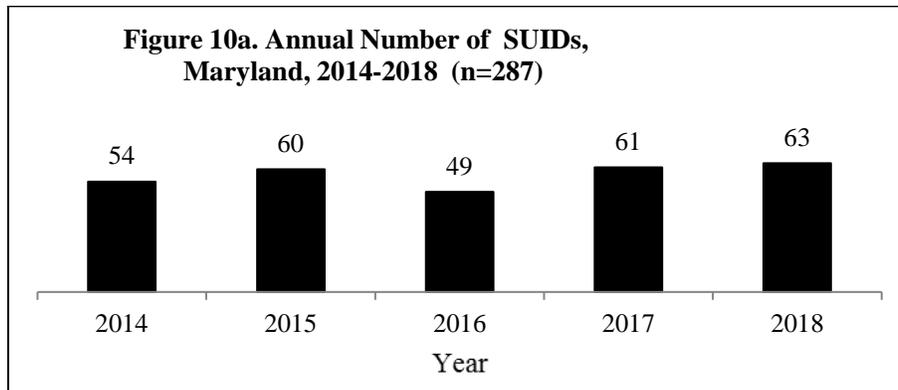
- Accidental suffocation by a soft sleep surface (e.g., an adult bed, waterbed mattress, pillows, or soft couch or chair cushions) or other soft materials (e.g., stuffed toys, blankets, or crib bumpers) placed in the infant’s sleep environment;
- Overlay when the infant is bed-sharing with another person who rolls on top of or against the infant;

² Key components of a safe sleep environment are placing infants to sleep alone, on their backs, on a firm sleep surface with no soft objects, and in a smoke-free environment.

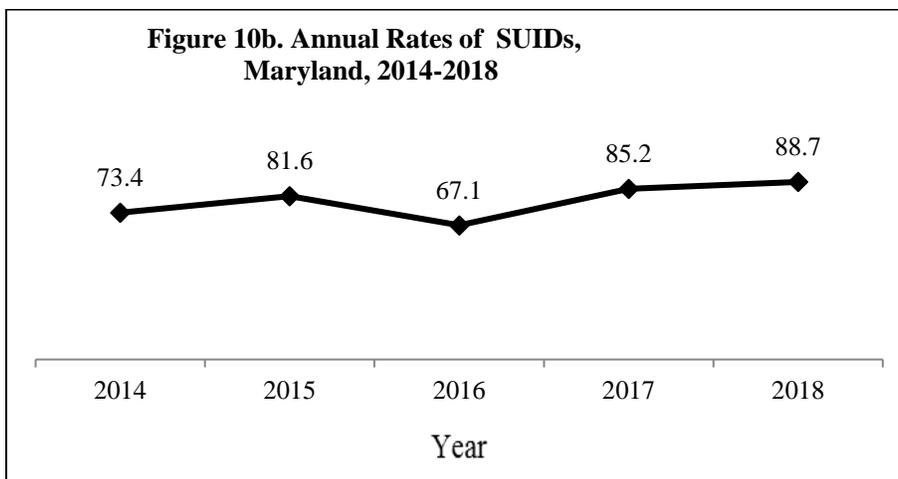
- Wedging or entrapment of the infant between two objects (e.g., a mattress and wall or bed frame, or between furniture cushions); and
- Strangulation when the infant’s head and neck become caught between crib railings, or the infant’s neck becomes entangled in a cord or other material within the sleep environment.

Even after a thorough investigation, there are some SUID cases in which there is no evidence of non-natural cause of death or circumstances that cause concern for investigators. These cases fall under the subcategory of SIDS. SIDS is a diagnosis of exclusion, assigned only when all known and possible causes of death have been ruled out.

In Maryland, there is an average of 58 SUID cases referred for review by the local CFR teams each year. A total of 287 SUID cases occurred between 2014 and 2018 (Figure 10a). Fifteen (five percent) of these deaths were attributed to SIDS. From 2014 to 2018, the annual rate of Child Fatality Review SUID cases increased by 21 percent (Figure 10b).



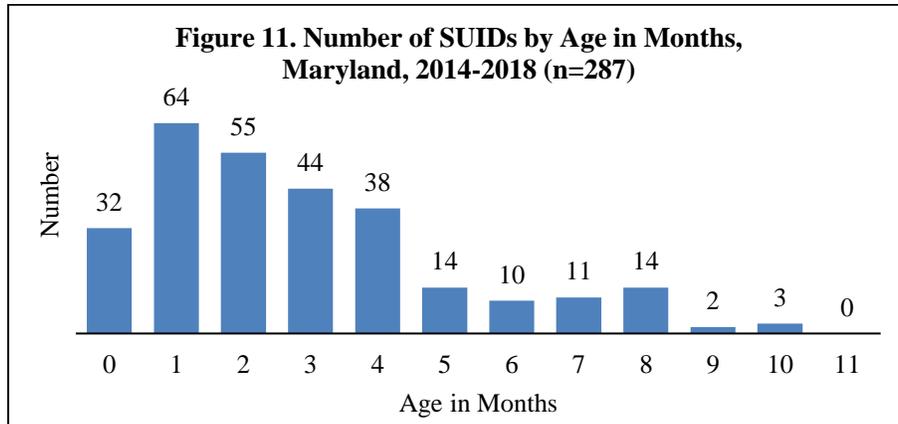
Source: CDRCRS, as of 10/2/2019.



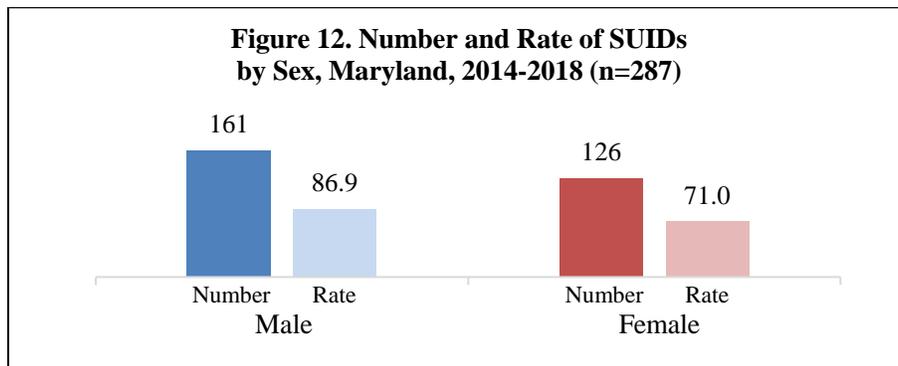
Source: CDRCRS, as of 10/2/2019.

Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data.

Of the 287 SUID cases during the period from 2014 to 2018, 233 (81 percent) occurred during the time period from birth to four months of age (Figure 11). Seventy percent occurred between the ages of 1 and 4 months. Fifty-six percent of these deaths occurred among male infants, and 44 percent occurred among female infants (Figure 12).



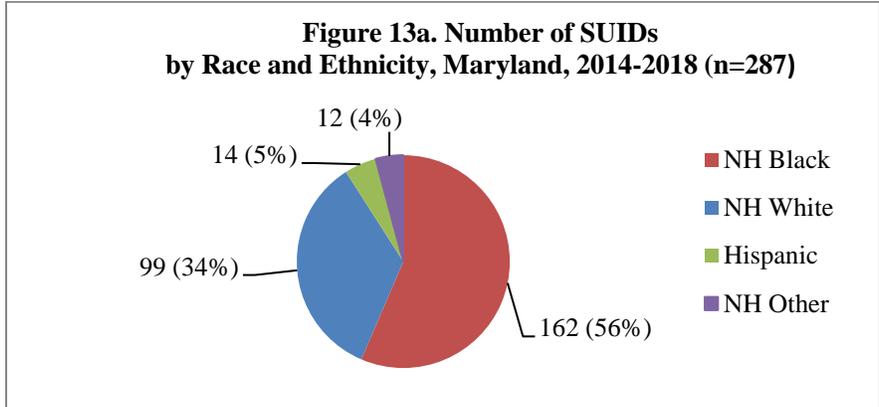
Source: CDRCRS, as of 10/2/2019.



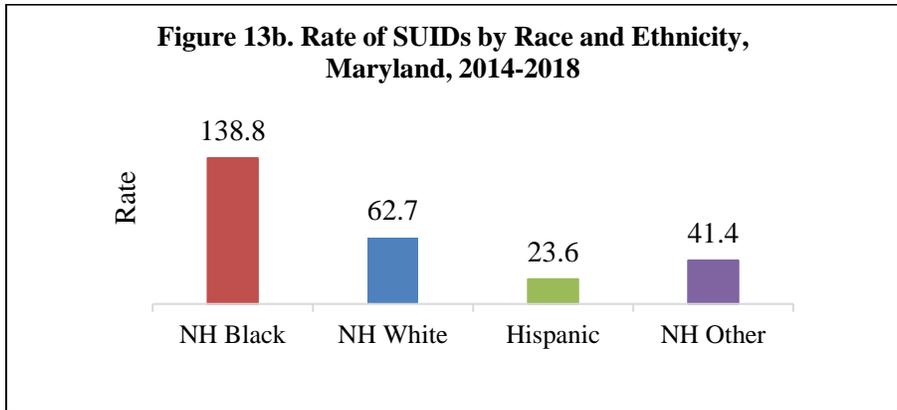
Source: CDRCRS, as of 10/2/2019.

Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data.

Of the SUID cases occurring from 2014 to 2018, 162 deaths (56 percent) occurred among Non-Hispanic Black infants (Figure 13a). Considering the population of infants by race and ethnicity, the SUID rate among Non-Hispanic Black infants was more than two times greater than the rate among Non-Hispanic White infants, and nearly six times the rate among Hispanic infants (Figure 13b).



Source: CDRCRS, as of 10/2/2019.



Source: CDRCRS, as of 10/2/2019.

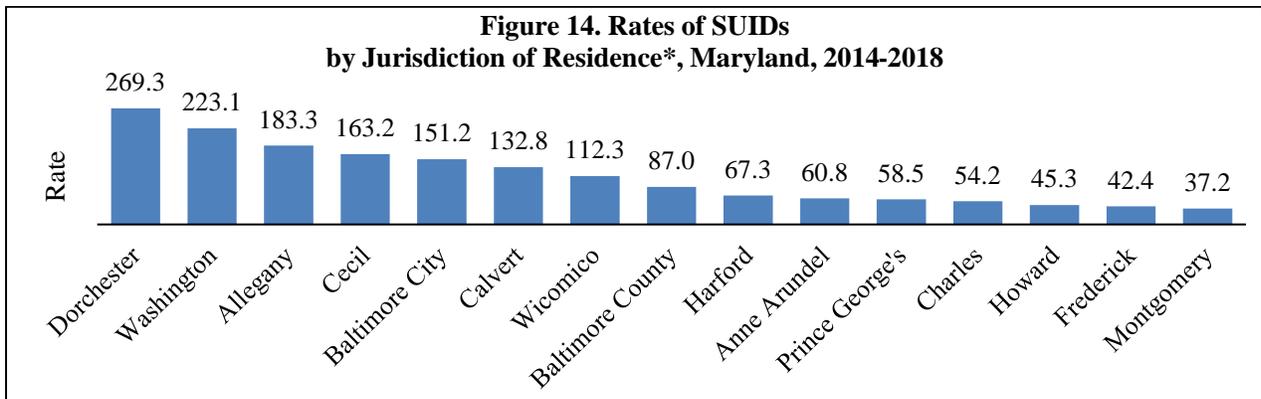
Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data.

Table 5 shows the number of SUIDs by jurisdiction of residence of the infant at the time of death from 2014 to 2018. The largest number of SUIDs each year occurred among residents of Baltimore City, which accounted for 22 percent of all SUIDs during this period. The number of SUID cases is small, which makes it difficult to identify trends across jurisdictions.

Table 5. Number of SUIDs by Jurisdiction of Residence, Maryland, 2014-2018 (n=287)						
	2014	2015	2016	2017	2018	Total
Baltimore City	13	13	8	16	13	63
Baltimore County	11	8	4	11	9	43
Prince George's	5	7	7	5	12	36
Montgomery	4	5	4	5	6	24
Anne Arundel	3	1	8	5	4	21
Washington	3	6	3	6	1	19
Cecil	1	3	3	1	1	9
Harford	5	1	3	0	0	9
Howard	0	4	3	0	1	8
Wicomico	0	0	1	3	3	7
Allegany	2	3	1	0	0	6
Calvert	1	1	0	2	2	6
Frederick	1	0	1	3	1	6
Charles	1	1	2	0	1	5
Dorchester	0	1	0	1	3	5
St. Mary's	2	2	0	0	0	4
Caroline	0	0	0	0	3	3
Carroll	0	1	0	0	2	3
Garrett	1	1	0	0	0	2
Queen Anne's	0	0	0	1	1	2
Somerset	1	0	0	1	0	2
Worcester	0	1	1	0	0	2
Kent	0	0	0	1	0	1
Talbot	0	1	0	0	0	1
Total	54	60	49	61	63	287

Source: CDRCRS, as of 10/2/2019.

Similar to overall child death rates, the greatest number of SUID cases came from urban areas, but the rates were highest in Maryland's rural counties (Figure 14). Infants residing in Dorchester County had the highest rate of SUID cases at 269.3 per 100,000 live births during the period from 2014 to 2018, which was more than three times the statewide rate of 79.1 deaths per 100,000 population during the same time period. Montgomery County had the lowest rate of SUID cases at 37.2 per 100,000 live births from 2014-2018, which was less than half of the statewide rate of SUID cases.

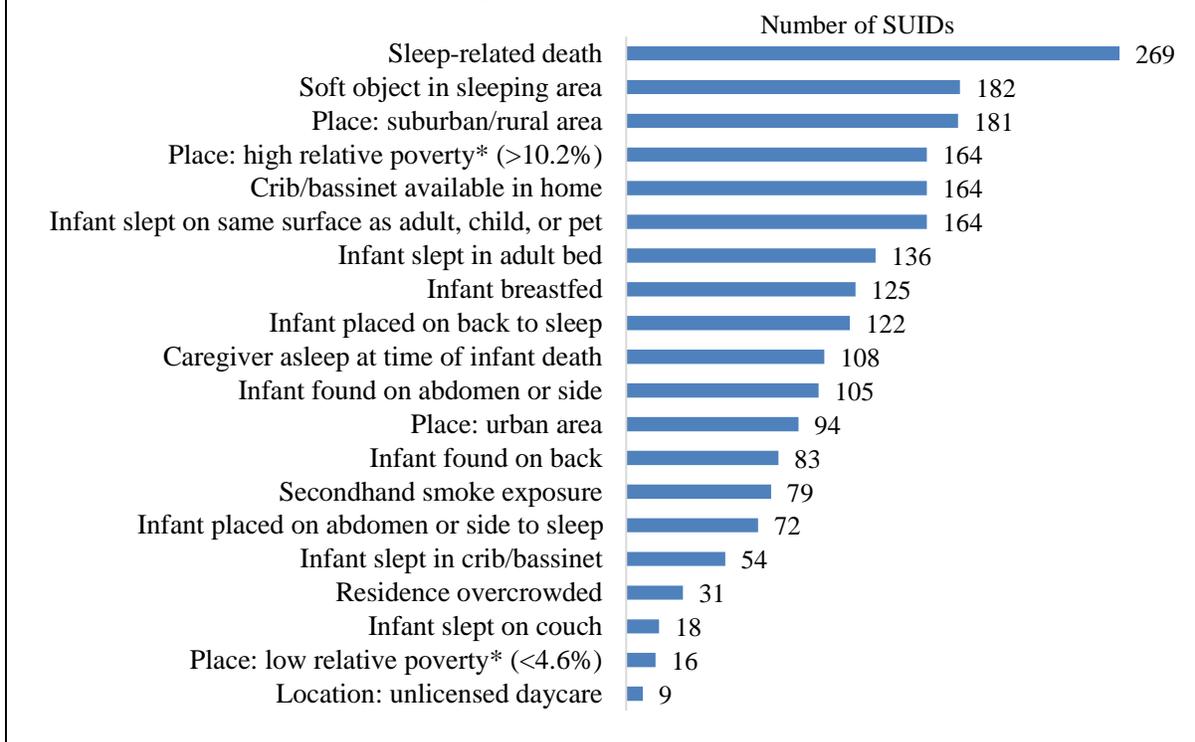


Source: CDRCRS, as of 10/2/2019. Rates per 100,000 live births based on Maryland Vital Statistics Administration live birth data. Minimum five SUID cases.
 *Caroline, Carroll, Garrett, Kent, Queen Anne's, St. Mary's, Somerset, Talbot, and Worcester Counties had fewer than five SUID cases and are not displayed.

All OCME referred deaths, including SUIDs, are reviewed by the local CFR team in the jurisdiction of residence. As previously stated, data from these case reviews are entered into a national database, the Child Death Review Case Reporting System (CDRCRS), which is maintained by the National Center for the Review and Prevention of Child Death. Maryland data have been entered into the CDRCRS since January 2010. The SUID case reviews entered into the CDRCRS database were further analyzed to determine more detailed information surrounding these deaths. Information on every item was not available for every case. The specific information may not have been known or reported. Therefore, the numbers of cases shown in Figure 15 and Tables 6 and 7 represent a minimum number of cases with a given characteristic.

Figure 15 shows incident characteristics of SUIDs in Maryland. The death was determined to be sleep-related in 269 (94 percent) of the 287 SUID cases. Sixty-three percent of cases occurred in suburban or rural areas. In 164 cases (57 percent), the infant was sleeping on the same surface as an adult, child, or pet, otherwise known as “bed-sharing.” Fifty-seven percent of the infants lived in zip codes with high relative poverty. Thirty-seven percent of the infants were found on their abdomen or side. Twenty-eight percent of the infants were exposed to secondhand smoke. Three percent of SUID cases occurred at an unlicensed daycare setting.

Figure 15. Incident Characteristics of SUIDs, Maryland, 2014-2018 (n=287)



Source: CDCRCS, as of 10/2/2019.

* Poverty estimates are taken from US Census American Community Survey 2016 five-year ZIP code tabulation area (ZCTA) estimates; 2.5 percent of SUID deaths had missing ZCTA information. Poverty rates are defined by the percentage of residents reporting poverty status in the past 12 months on the survey. The low and high poverty percentage cutpoints used are based on the first and third tertiles of Maryland ZCTA poverty rates, respectively.

Table 6 shows the characteristics of the primary caregiver for the infants who died of SUID. A biological parent was the primary caregiver in 273 (95 percent) of the cases. Forty-four percent of caregivers were younger than 25 years old, 50 percent were receiving social services, 44 percent had a high school education or less, 34 percent were low income, and 23 percent were unemployed. Thirty-seven percent of caregivers had a history of substance use. Fifty-seven percent of the infants were enrolled in Medical Assistance.

Table 6. Caregiver Characteristics Associated with SUIDs, Maryland, 2014-2018 (n=287)		
	<u>Number</u>	<u>Percent</u>
Primary caregiver is biological parent	273	95.1
Receiving social services*	144	50.2
Primary caregiver obtained 12 years or less of education	127	44.3
Primary caregiver <25 years old	125	43.6
Infant was breastfed	125	43.6
History of substance abuse	106	36.9
Low income	98	34.2
Unemployed	67	23.3
Child had open CPS case at death	30	10.5

Source: CDRCRS, as of 10/2/2019.

*Social services include: Medical Assistance; Temporary Assistance for Needy Families; Special Supplemental Nutrition Program for Women, Infants, and Children; and Supplemental Nutrition Assistance Program.

More than half of all SUID cases from 2014-2018 occurred when the infant was bed-sharing. Table 7 compares characteristics of bed-sharing and non-bed-sharing SUID cases. The caregiver was impaired by drugs or alcohol in 13 bed-sharing SUIDs compared to only one non-bed-sharing SUID case.

In Maryland, SUID remains the leading cause of unexpected death among infants and leading overall cause of infant mortality. The vast majority of these deaths are sleep-related, and unsafe infant sleep practices were identified on case review. At least half of all SUID cases involved bed-sharing. Racial and ethnic disparities persist in SUIDs, with the rate of these deaths more than twice as high among Non-Hispanic Black infants compared to Non-Hispanic White infants, and more than six times higher than among Hispanic infants. Many of these families were receiving social services at the time of the infant's death, providing an opportunity for health care providers and social service agencies to reinforce safe sleep practices with the parent or caregiver of an infant.

Table 7. Comparison of Bed-Sharing and Non-Bed-Sharing SUIDs, Maryland, 2014-2018

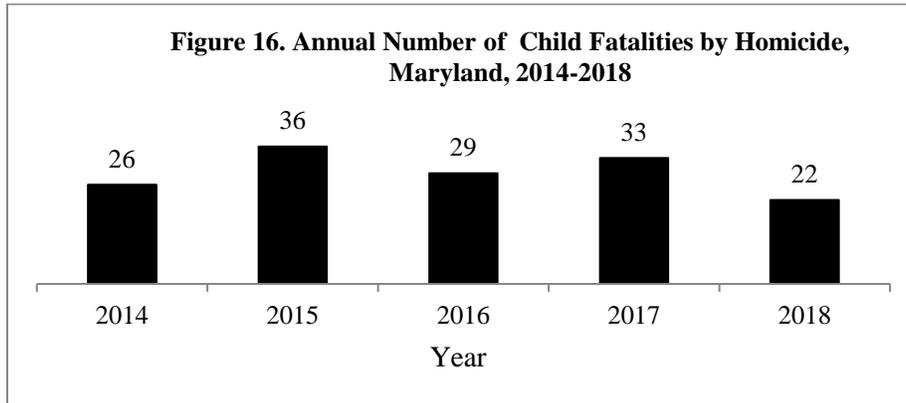
	Bed-sharing (n=164)	Non-bed-sharing (n=123)
Place:		
Urban area	61 (37%)	33 (27%)
Suburban/rural area	99 (60%)	82 (67%)
Residence overcrowded	17 (10%)	14 (11%)
Secondhand smoke exposure*	58 (35%)	21 (17%)
Infant sleep position and environment:		
Placed on stomach or side to sleep	44 (27%)	28 (23%)
Placed on back to sleep	69 (42%)	53 (43%)
Sleeping in crib or bassinet*	6 (4%)	48 (39%)
Sleeping in adult bed*	116 (71%)	20 (16%)
Sleeping on couch*	16 (10%)	2 (2%)
Crib or bassinet available in home	95 (58%)	69 (56%)
Characteristics of infant:		
Infant's mean age (months)	2.8	3.0
Race – Non-Hispanic Black	100 (61%)	62 (50%)
Non-Hispanic White*	48 (29%)	51 (41%)
Hispanic	8 (5%)	6 (5%)
Breastfed	79 (48%)	46 (37%)
Characteristics of primary caregiver:		
High school education or less	80 (49%)	47 (38%)
Receives social services	85 (52%)	59 (48%)
Low income	54 (33%)	44 (38%)
Characteristics of caregiver at time of death:		
Biological parent*	138 (84%)	85 (69%)
<25 years old	37 (23%)	30 (24%)
Male	31 (19%)	19 (15%)
History of mental illness	25 (15%)	17 (14%)
History of substance abuse	63 (38%)	38 (31%)
Impaired by drugs or alcohol*	13 (8%)	1 (1%)

Source: CDRCRS, as of 10/2/2019.

* Denotes differences that are greater than would be expected by chance alone, i.e. a statistically significant difference at $p < 0.05$.

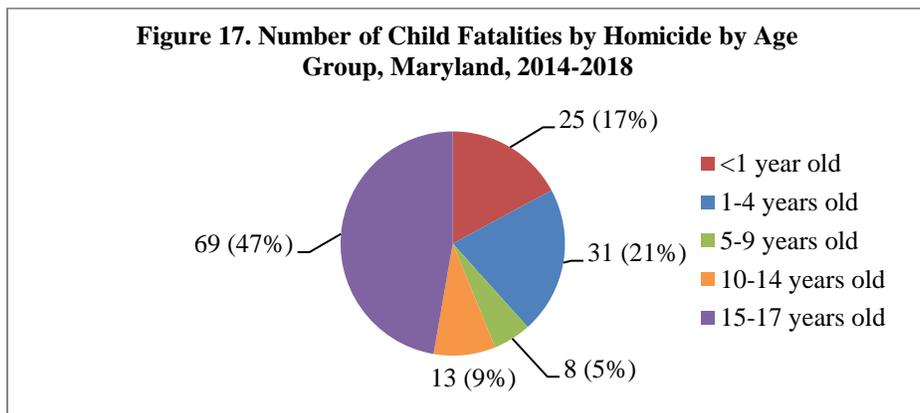
Homicide Deaths in Maryland

Death by homicide was the third leading cause of 2018 unexpected child deaths, accounting for 12 percent of deaths. The number of child fatality cases by homicide averaged 29 per year from 2014-2018. Homicide has been the third leading cause of unexpected child deaths since at least 2014.

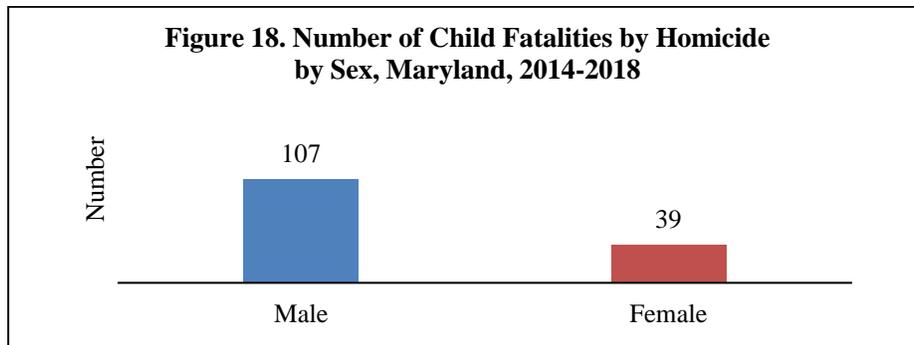


Source: CDRCRS, as of 10/2/2019.

Of the 146 deaths by homicide occurring in the five-year period from 2014 to 2018, 47 percent were among teens age 15-17 (Figure 17). Seventeen percent of deaths were among infants under the age of one, and 36 percent were among children ages one to fourteen. Seventy-three percent of deaths by homicide occurred among male children and 27 percent among female children (Figure 18).

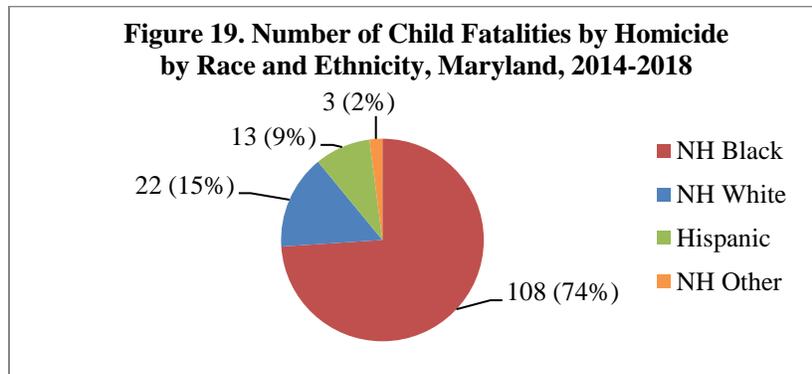


Source: CDRCRS, as of 10/2/2019.



Source: CDRCRS, as of 10/2/2019.

Seventy-four percent of deaths by homicide occurred among Non-Hispanic Black children, 15 percent among Non-Hispanic White children, and nine percent among Hispanic children (Figure 19). Deaths by homicide by jurisdiction of residence are shown in Table 8.



Source: CDRCRS, as of 10/2/2019.

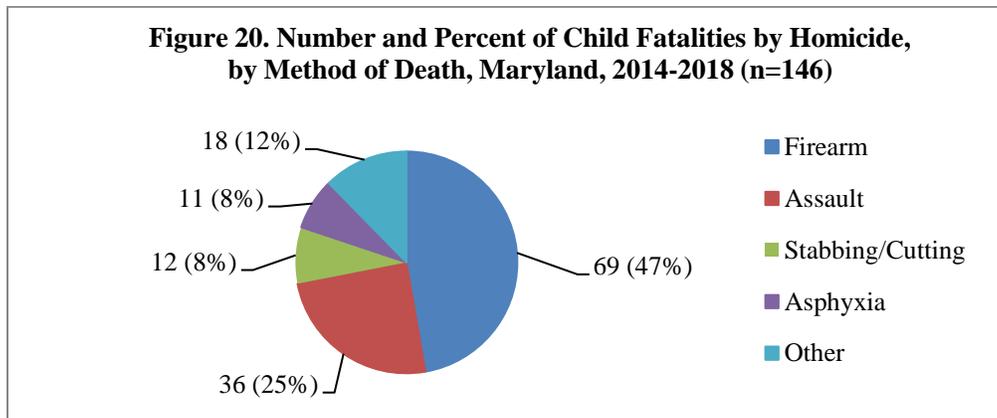
Table 8. Number of Child Fatalities due to Homicide by Jurisdiction of Residence*, Maryland, 2014-2018 (n=146)						
Jurisdiction	2014	2015	2016	2017	2018	Total
Baltimore City	16	20	13	12	15	76
Baltimore County	2	5	4	3	1	15
Anne Arundel	1	1	4	6	0	12
Prince George's	1	1	5	4	1	12
Montgomery	2	2	0	2	0	6
Charles	0	1	0	1	3	5
Wicomico	1	2	0	1	0	4
Harford	1	1	0	1	0	3
St. Mary's	0	0	1	1	1	3
Cecil	0	1	0	1	0	2
Washington	0	2	0	0	0	2
Allegany	0	0	1	0	0	1
Carroll	0	0	1	0	0	1
Frederick	1	0	0	0	0	1
Howard	0	0	0	1	0	1
Somerset	1	0	0	0	0	1
Talbot	0	0	0	0	1	1
Total	26	36	29	33	22	146

Source: CDRCRS, as of 10/2/2019.

*Allegany, Calvert, Caroline, Carroll, Dorchester, Garrett, Kent, Queen Anne's, St. Mary's, and Worcester are not displayed as they had no Child Fatalities due to Homicide from 2014-2018.

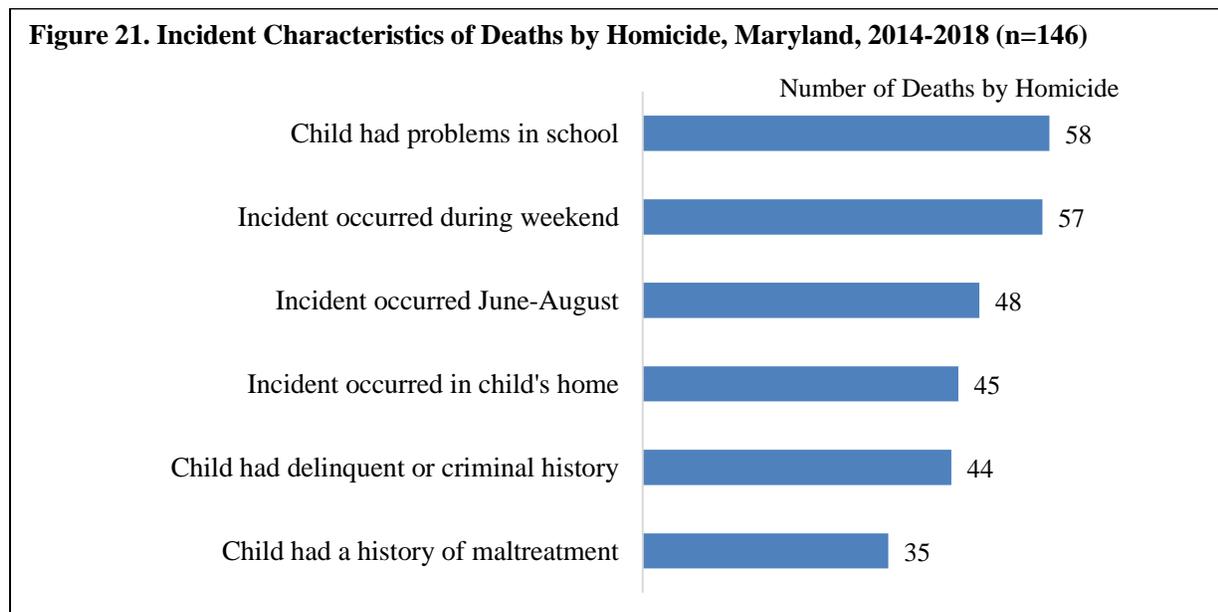
More detailed information on deaths by homicide is available in the CDRCRS database. Information on every item was not available for every case. The specific information may not have been known or reported. Therefore, the numbers of cases shown in the following figures represent a minimum number of cases with a given characteristic.

Figure 20 shows the deaths by homicide by cause of death, including firearm (47 percent of cases), assault (25 percent), stabbing/cutting (8 percent), and asphyxia (8 percent). Other causes of death accounted for 12 percent of all deaths due to homicide, and include drug related causes (6 deaths, 4 percent), neglect (5 deaths, 3 percent), motor vehicles (4 deaths, 3 percent), and fire/burns (3 deaths, 2 percent).



Source: CDRCRS, as of 10/2/2019.

Figure 21 shows incident characteristics of children who died by homicide in Maryland. Forty-two percent of the children had problems in school and 25 percent had a history of maltreatment. Thirty-two percent had a history of delinquent or criminal history. Due to the large amount of missing information from the case review, these numbers are probably an underrepresentation.



Source: CDRCRS, as of 10/2/2019.

Table 9 compares characteristics of firearm and non-firearm homicide deaths. Non-firearm deaths include deaths by homicide due to assault (36 deaths), stabbing/cutting (12 deaths), asphyxia (11 deaths), drug-related causes (6 deaths), neglect (5 deaths), motor vehicle accidents (4 deaths), and fires/burns (3 deaths). Homicides caused by both firearms and non-firearms were more common among males and Non-Hispanic Black children. Homicides caused by firearm were more common among children age 10 and older, while homicides caused by non-firearms were more common among children under the age of 10. Fifty-one percent of the non-firearm cases were child abuse or neglect, and in 36 percent of the non-firearm cases, the perpetrator was the biological parent. Due to the large amount of missing information from the case review, these numbers are likely an underrepresentation.

Table 9. Differences in Characteristics of Firearm and Non-Firearm Deaths by Homicide, Maryland, 2014-2018 (n=146)

	Firearm (n=69)	Non-Firearm (n=77)
Place:		
Urban area*	49 (71%)	35 (45%)
Suburban/rural area	18 (26%)	27 (35%)
Incident occurred in child's home*	8 (12%)	37 (48%)
Demographic Characteristics of Child:		
Gender: Male	56 (81%)	51 (66%)
Race: Non-Hispanic Black*	57 (83%)	51 (66%)
Race: Hispanic	6 (9%)	7 (9%)
Age: 10 years or older*	62 (90%)	20 (26%)
Insurance: Medicaid	31 (45%)	29 (38%)
Incident Characteristics:		
Child had delinquent or criminal history*	40 (58%)	4 (5%)
Child had problems in school*	47 (68%)	11 (14%)
Child had history as victim of maltreatment	16 (23%)	19 (25%)
Child had open CPS case at time of death	5 (7%)	8 (10%)
Child had history of substance abuse*	30 (43%)	3 (4%)
Child abuse/neglect*	1 (1%)	39 (51%)
Person responsible was biological parent*	3 (4%)	28 (36%)
Person responsible had delinquent or criminal history*	5 (7%)	23 (30%)

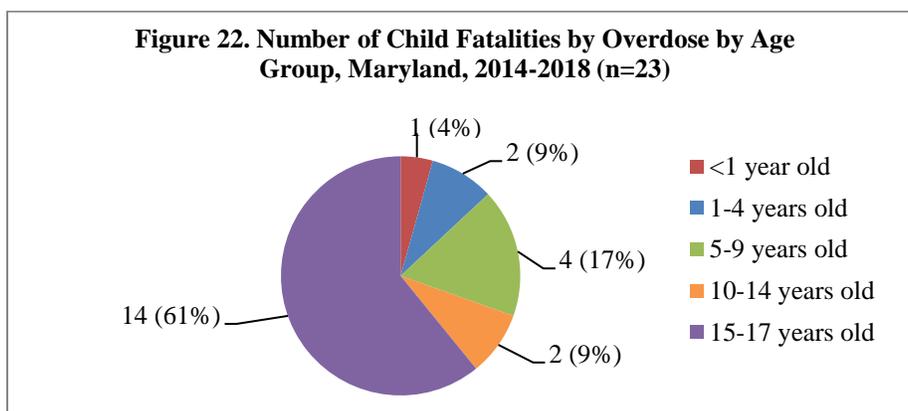
Source: CDRCRS, as of 10/2/2019.

* Denotes differences that are greater than would be expected by chance alone, i.e. a statistically significant difference at $p < 0.05$.

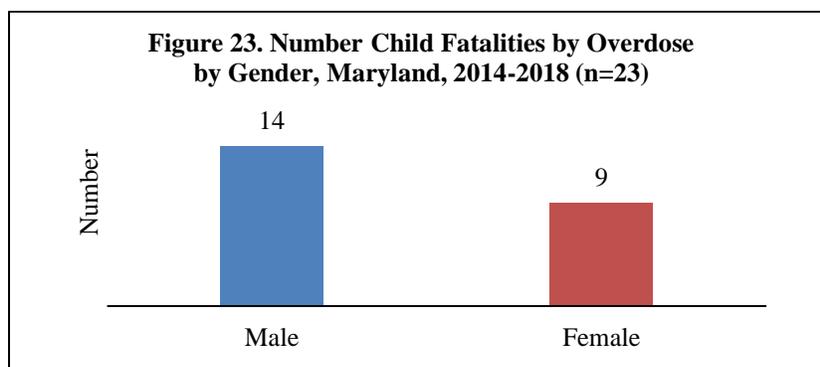
Deaths by Overdose in Maryland

Deaths by overdose were the second leading cause of 2018 child fatality review injury deaths. The number of children who died by drug overdose more than tripled from 2017 to 2018 (Figure 22). Because of this increase, deaths by overdose were reviewed in greater detail.

Of the 23 deaths by overdose occurring in the five-year period from 2014 to 2018, 61 percent were among children age 15-17 (Figure 23). Sixty-one percent of deaths by overdose occurred among male children and 39 percent among females (Figure 22).

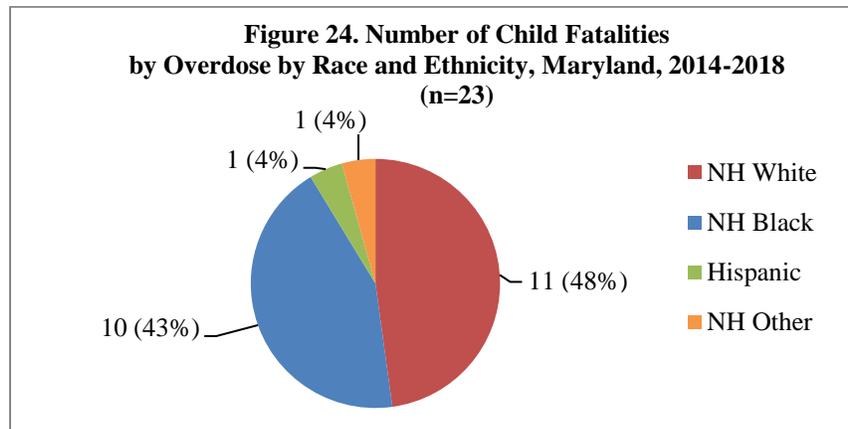


Source: CDRCRS, as of 10/2/2019.



Source: CDRCRS, as of 10/2/2019.

Forty-eight percent of the deaths by Overdose occurred among Non-Hispanic White children, 43 percent among Non-Hispanic Black children, and 4 percent among Hispanic children and Non-Hispanic children of other races (Figure 24). Deaths by overdose by jurisdiction of residence are shown in Table 10.



Source: CDRCRS, as of 10/2/2019.

Table 10. Number of Child Fatalities by Overdose by Jurisdiction of Residence*, Maryland, 2014-2018 (n=23)						
Jurisdiction	2014	2015	2016	2017	2018	Total
Baltimore County	1	0	0	1	4	6
Anne Arundel	0	4	0	0	1	5
Baltimore City	0	1	2	0	2	5
Harford	0	0	2	0	0	2
Charles	0	1	0	0	0	1
Frederick	0	0	1	0	0	1
Montgomery	1	0	0	0	0	1
Prince George's	0	0	0	1	0	1
St. Mary's	1	0	0	0	0	1
Total	3	6	5	2	7	23

Source: CDRCRS, as of 10/2/2019.*Allegany, Calvert, Caroline, Dorchester, Garrett, Howard, Kent, Queen Anne's, Somerset, Talbot, Washington, Wicomico, and Worcester counties do not appear as there were no Child Fatalities by Overdose from 2014-2018.

Table 11 shows the drugs implicated in the deaths by overdose. Due to many of the cases involving more than one substance, the cases shown do not add up to the number of overdose deaths. Fentanyl was implicated in 11 deaths (48 percent) and methadone in seven (30 percent).

Table 11. Drugs Implicated in Child Fatalities by Overdose, Maryland, 2014-2018	
Drug	Number and Percent of Deaths by Overdose
Fentanyl	11 (48%)
Methadone	7 (30%)
Morphine	3 (13%)
Oxycodone	3 (13%)
Diphenhydramine	1 (4%)
Cocaine	1 (4%)
Unspecified Opiate	1 (4%)

*Due to many cases involving more than one substance, cases will not add up to the number of overdose deaths. Source: CDRCRS, as of 10/2/2019.

Summary and Recommendations

In 2018, the Child Fatality Review Program reviewed 187 unexpected child deaths. The number of unexpected child deaths in Maryland decreased by 10 percent (or 21 deaths) from 2017 to 2018. The number of child fatalities requiring review decreased among children of all ages and races from 2017 to 2018, except for Hispanic children, children ages one to six months, and children ages five to nine years old. SUID, injury, and homicide were the leading causes of unexpected child deaths in 2018. Infants less than one year of age continue to account for the largest proportion of unexpected deaths, with SUID risk peaking between one and four months of age. The majority of child fatalities requiring review are due to SUID and involve unsafe infant sleep practices. The number of deaths due to drug overdoses have more than tripled since 2017. Fentanyl is the drug most often implicated in overdose deaths (48%). Racial and ethnic disparities persist, with a disproportionate number of child deaths occurring among Non-Hispanic Black children, particularly among SUID cases and homicide deaths. Deaths by suicide decreased from a high of 26 cases in 2017 to 20 cases in 2018, however deaths by suicide are the fifth leading cause of OCME-referred child deaths.

In response to the 2018 review of OCME-referred child deaths in Maryland, the State CFR Team (Team) puts forth the following recommendations and proposed actions for the State agencies represented on the Team.

Recommendations Related to SUID

The Team supports ongoing activities to better understand why safe sleep practices are not followed, especially in communities with high SUID rates. The Team supports MDH’s partnership with Morgan State University to convene focus groups to better understand barriers to safe sleep, with the expected outcome of improved messaging to address the persistent racial disparity in sleep-related deaths.

The Team also recommends improving parent teaching on safe sleep practices in all Maryland delivery hospitals. The Team supports the ongoing participation of MDH in the CDC SUID Case Registry. This program increases access to high-quality and complete SUID surveillance data for program improvement and public health purposes, specifically those addressing racial disparities in SUID. The Team also supports efforts to increase community awareness of SUID associated factors, particularly in disproportionately affected communities.

Recommendations Related to Homicide

The Team recommends efforts to improve understanding of the factors contributing to the increase in youth homicides and to address potential opportunities for prevention. Jurisdictions with large numbers of youth homicides could consider investing resources in violence prevention programs that act as a deterrent for violent behavior and keep those most at risk of being a victim of youth homicide engaged in community support systems, such as Baltimore City’s SummerScapeBmore program, Connect-2-Success Job Training program, and PopUp/Satellite Youth Connection Center.

The Team also encourages improved awareness of the role of young people’s online behaviors as factors in real world violence, and recommends jurisdictions with large numbers of youth homicides to consider the implementation of initiatives such as the E-Responder model in New York City. The E-Responder model uses trained responders to identify and de-escalate risky online behavior. This public health model was developed after New York City law enforcement and community-based organizations recognized that many firearm-related deaths and injuries began as taunts or threats on social media between youth “crews.” By addressing the amplification that takes place on social media, it is possible that many conflicts could be identified and de-escalated before real world violence takes place.

The Team supports the American Academy of Pediatrics (AAP) recommendation that pediatricians incorporate questions about the presence and availability of firearms during patient history collection. The AAP urges parents who possess guns to prevent children from having access to these guns. Combined with distribution of gun locks to promote safer storage of guns in homes with children, these efforts can help to limit household exposure to unlocked and loaded guns.

Recommendations Related to Overdose

The Team recommends efforts to address the significant increase in overdose deaths in 2018. There were a total of 7 deaths among children ages infant to nine years old between 2014-2018, all of which involved the ingestion of oxycodone or methadone. Overdose deaths among teenagers ages 15-17 accounted for 61 percent of all overdose deaths between 2014-2018. Fentanyl was involved in 78 percent of deaths in this age group. The Team recommends consulting with the Behavioral Health Administration and the Maryland Poison Center around safe storage education. The team also recommends that physicians and providers distribute information to patients receiving methadone maintenance prescriptions. These measures would include methadone programs identifying patients who are allowed take-home doses that have children residing in or visiting their homes. The programs would then provide the patients with additional child safety-specific counseling, along with warning labels (similar to the Mr. Yuk household poison control campaign) targeted towards young children, and would provide additional naloxone for households that include young children.

To address overdoses among older teens, the Team recommends:

- (1) Additional overdose education campaigns included within the school health curriculum;
- (2) Local Health Department campaigns about the risks of fentanyl;
- (3) Increased community access to naloxone, including at health offices in private schools; and
- (4) The provision of fentanyl testing strips at school-based health centers and safe access centers serving youth.

The Team supports the efforts of MDH's Maternal and Child Health Bureau to work with interested local CFR teams to identify overdoses in their jurisdiction and conduct reviews of near-fatality overdose cases. Local CFR teams will be encouraged to collaborate with local hospitals and emergency departments to identify cases of non-fatal overdose events for review and to facilitate local level interventions.

Appendix A: 2019 State Child Fatality Review Team Members

Health-General Article §5-703(a), Annotated Code of Maryland provides that the State Team shall be a multidisciplinary and multiagency review team, composed of at least 25 members, including:

- (1) Attorney General – Christle Sheppard Southall, Esq, designee;
- (2) Chief Medical Examiner – Ling Li, MD, designee;
- (3) Secretary of Human Resources – Corine Mullings, LMSW, designee;
- (4) Secretary of Health – S. Lee Woods, MD, PhD, designee;
- (5) State Superintendent of Schools – Lynne Muller, PhD, designee;
- (6) Secretary of Juvenile Services – Jenny Maehr, MD, designee;
- (7) Special Secretary for Children, Youth and Families – permanent vacancy due to the sunset of the Office for Children, Youth, and Families in 2005;
- (8) Secretary of State Police – Sgt. David Sexton, designee;
- (9) President of the State’s Attorneys’ Association – Debbie Feinstein, JD, designee;
- (10) Chief of the Division of Vital Records – Monique Wilson, designee;
- (11) A Representative of the Center for Infant and Child Loss – LaToya Bates, LCSW-C, Director, Center for Infant and Child Loss;
- (12) Director of the Behavioral Health Administration – Steven Whitefield, MD, designee;
- (13) Two pediatricians with experience in diagnosing and treating injuries and child abuse and neglect, appointed by the Governor from a list submitted by the state chapter of the American Academy of Pediatrics:

Richard Lichenstein, MD, FAAP;
Wendy Lane, MD, MPH, FAAP; and
- (14) Eleven members of the general public with interest or expertise in child safety or welfare, appointed by the Governor, including child advocates, CASA volunteers, health and mental health professionals, and attorneys who represent children:

Richelle J. Cricks, CNM, MSN

Patricia K. Cronin, LCSW-C

Mary C. Gentile, LCSW-C

Cynthia Wright Johnson

Ivone Kim, MD

Sharyn King

Neveen H. Kurtom, JD

Laurel Moody, RN, MS

Shantell Roberts

Joyce P. Williams, DNP

Anntinette Williams, LICSW

Appendix B: Duties of the State Child Fatality Review Team

Health-General Article, §5-704 (b), sets forth the Team's 13 duties. To achieve its purpose the State CFR Team shall:

- 1) Undertake annual statistical studies of the incidence and causes of child fatalities in the State, including an analysis of community and public and private agency involvement with the decedents and their families before and after the deaths;
- 2) Review reports from local teams;
- 3) Provide training and written materials to the local teams established under §5-705 of this subtitle to assist them in carrying out their duties, including model protocols for the operation of local teams;
- 4) In cooperation with the local teams, develop a protocol for child fatality investigations, including procedures for local health departments, law enforcement agencies, local medical examiners, and local departments of social services, using best practices from other states and jurisdictions;
- 5) Develop a protocol for the collection of data regarding child deaths and provide training to local teams and county health departments on the use of the protocol;
- 6) Undertake a study of the operations of local teams, including the State and local laws, regulations, and policies of the agencies represented on the local teams, recommend appropriate changes to any regulation or policy needed to prevent child deaths, and include proposals for changes to State and local laws in the annual report required by paragraph (12) of this subsection;
- 7) Consider local and statewide training needs, including cross-agency training and service gaps, and make recommendations to member agencies to develop and deliver these training needs;
- 8) Examine confidentiality and access to information laws, regulations, and policies for agencies with responsibility for children, including health, public welfare, education, social services, mental health, and law enforcement agencies, recommend appropriate changes to any regulations and policies that impede the exchange of information necessary to protect children from preventable deaths, and include proposals for changes to statutes in the annual report required by paragraph (12) of this subsection;
- 9) Examine the policies and procedures of the State and local agencies and specific cases that the State Team considers necessary to perform its duties under this section, in order to evaluate the extent to which State and local agencies are effectively discharging their child protection responsibilities in accordance with:
 - i) The State plan under 42 U.S.C. §5106a(b);
 - ii) The child protection standards set forth in 42 U.S.C. §5106a(b); and
 - iii) Any other criteria that the State Team considers important to ensure the protection of children;
- 10) Educate the public regarding the incidence and causes of child deaths, the public role in preventing child deaths, and specific steps the public can undertake to prevent child deaths;

- 11) Recommend to the Secretary any regulations necessary for its own operation and the operation of the local teams;
- 12) Provide the Governor, the public, and subject to §2-1257 of the State Government Article, the General Assembly with annual written reports, which shall include the State Team's findings and recommendations; and
- 13) In consultation with local teams:
 - i) Define "near fatality"; and
 - ii) Develop procedures and protocols that local teams and the State Team may use to review cases of near fatality.

Appendix C: 2018 Annual Maryland Child Fatality Review Conference

Agenda

Tuesday, December 4, 2018

James N. Robey Public Safety Training Center
2200 Scott Wheeler Dr. Marriottsville, MD 21104

8:00 – 8:30 AM	Registration
8:30– 8:45 AM	Greetings and Introductions/ Local Team Updates <i>Rich Lichenstein, MD</i> <i>Jennifer Herrera, Maryland Department of Health</i>
8:45– 9:45 AM	State Team: 4TH Quarter Meeting <i>Jennifer Herrera, Maryland Department of Health</i> Local Teams: 2018 CFR Report Highlights and Data Trends <i>Kate Schneider, MPH, Maryland Department of Health</i>
9:45– 10:30 AM	Youth Suicide Prevention: Patterns of Risk and the Prevention Landscape <i>Holly Wilcox, MA, Ph.D</i> <i>Johns Hopkins Bloomberg School of Public Health & School of Medicine</i>
10:30 – 10:45 AM	Break
10:45– 11:30 AM	Preventing Youth Suicide in Maryland: A State Perspective <i>Janel Cabbage, LGPC, Behavioral Health Administration</i>
11:30 AM – 12:00 PM	Montgomery County’s All Hands Response to Suicide Prevention <i>Rachel Larkin, MA, MSW, EveryMind</i>
12:00 – 12:45 PM	Local Team Presentations – Suicide Prevention <i>Sinmidele Badero, Baltimore City and Colleen Nester, Howard County</i>
12:45—1:30 PM	Lunch
1:30 – 2:30 PM	Youth Violence and the Importance of Building Community Partnerships <i>Col. Melvin Russell, Baltimore Police Department</i>
2:30 PM – 2:45 PM	Break
2:45– 3:45 PM	What Do We Really Know About Distracted Driving? <i>Johnathan Ehsani, Ph.D</i> <i>Johns Hopkins Bloomberg School of Public Health</i>
3:45 – 4:30 PM	Call-to-Action <i>Richard Lichenstein, MD & Jennifer Herrera</i>